

31

Notice of Allowability	Application No.	Applicant(s)	
	10/610,481	TUSCHEL ET AL.	
	Examiner	Art Unit	
	L. G. Lauchman	2877	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 5/25/2006.
2. ☒ The allowed claim(s) is/are 1-4,6-10,14 and 18.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|--|
| <ol style="list-style-type: none"> 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) 3. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date <u>3/15/2006</u> 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | <ol style="list-style-type: none"> 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____. 7. <input type="checkbox"/> Examiner's Amendment/Comment 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance 9. <input type="checkbox"/> Other _____. |
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Allowable Subject Matter

Claims 1-4, 6-10, 14, and 18 are allowed.

The following is an examiner's statement of reasons for allowance:

As to Claim 1, the prior art of record taken along or in combination, fails to disclose or render obvious illuminating a surface of the ion implanted semiconductor wafer with a flood illumination of monochromatic light of wavelength, illuminating an area A of the surface of a featureless uniformly Raman Scattering material with the same illumination system as step a), and correcting the image of the implanted area using the results of the imaging of the area of the surface of the uniformly Raman Scattering material, in combination with the rest of the limitations of the claim.

As to Claim 2, the prior art of record taken along or in combination, fails to disclose or render obvious illuminating an implanted surface of the ion implanted semiconductor wafer with a flood illumination, analyzing the image for evidence of inclusions having a Raman shift peak having a full width at half maximum above 4 cm^{-1} but below 30 cm^{-1} , in combination with the rest of the limitations of the claim.

As to Claim 3, the prior art of record taken along or in combination, fails to disclose or render obvious illuminating an implanted surface of the ion implanted semiconductor wafer with a flood illumination analyzing the image for evidence of inclusions having a fundamental or second order Raman shift peak having a full width at half maximum above 30 cm^{-1} but below 100 cm^{-1} , in combination with the rest of the limitations of the claim.

As to Claims 6, 9, and 10, the prior art of record taken along or in combination, fails to disclose or render obvious illuminating an implanted surface of the ion implanted semiconductor

Art Unit: 2877

wafer with a flood illumination, comparing intensity of a first image feature corresponding to an ion implanted region with intensity of a second image feature corresponding to an unimplanted single crystal semiconductor region, the first and second image features on the same image in the area A of the wafer, in combination with the rest of the limitations of the claims.

As to Claims 7 and 8, the prior art of record taken along or in combination, fails to disclose or render obvious wherein the ion implanted wafer is unannealed after implantation, and wherein the ion implanted region corresponding to the first image feature has insufficient implantation dose to fully amorphize the surface of the semiconductor wafer, in combination with the rest of the limitations of the claim.

As to Claim 14, the prior art of record taken along or in combination, fails to disclose or render obvious the imaging is in a first spatial dimension and one Raman shifted wavelength dimension, wherein a second spatial dimension is kept constant, and further imaging a number of further images, wherein each image is imaged using light from a different value of the second spatial dimension, in combination with the rest of the limitations of the claim.

As to Claim 18, the prior art of record taken along or in combination, fails to disclose or render obvious imaging a further plurality of images, each of the imaging using a different illuminating monochromatic wavelength λ_p , and wherein the depth distribution of the features producing the Raman shifted light for each illuminating wavelength λ_p is calculated from the plurality of images, in combination with the rest of the limitations of the claim.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue

fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to L. G. Lauchman whose telephone number is (571) 272-2418. The examiner's normal work schedule is 8:00am to 4:30pm (EST), Monday through Friday. If attempts to reach examiner by the telephone are unsuccessful, the examiner's supervisor Gregory J. Toatley, Jr. can be reached on (571) 272-2059, ext. 77.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any inquiry of a general nature or relating to the status of this application should be directed to the TC receptionist whose telephone number is (571) 272-1562.

A handwritten signature in black ink, appearing to read 'L. G. Lauchman', with a stylized, looping flourish extending from the end.

L. G. Lauchman
Primary Examiner
Art Unit 2877

May 25, 2006